Chapter 34A - Existing Structures

2001 CBC	PROPOSED ADOPTION	OSHPD		Comments
		1	4	
	Adopt entire chapter without amendments			
	Adopt entire chapter with amendments listed below	X	X	
	Adopt only those sections listed below			
	3401A.1	X	X	
1627A / 1641A CA	3402A.1	X	X	Relocated existing California Building Standards into IBC format
	3403A.2.3.3	X	X	Adoption of FEMA 356
	3406A.4	X	X	
	3410A.2	X	X	
	3410A.2.4	X	X	
1638A CA	3411 CA	X	X	Relocated existing California Building Standards into IBC format
1640A CA	3412A CA	X	X	Relocated existing California Building Standards into IBC format
	3413A CA	X	X	
1648A.1 CA	3413A.1 CA	X	X	Relocated existing California Building Standards into IBC format
	3413A.2 CA	X	X	Modifications to FEMA 356
1649A CA	3414A CA	X	X	Relocated existing California Building Standards into IBC format

EXPRESS TERMS

SECTION 3401*A* GENERAL

3401*A*.1 Scope. The provisions of this chapter shall control the alteration, repair, addition and change of occupancy of existing structures *for applications listed in Sections 110.1 (OSHPD 1), and 110.4 (OSHPD 4) regulated by the Office of Statewide Health Planning and Development (OSHPD).*

These applications include hospitals, skilled nursing facilities, intermediate care facilities and correctional treatment centers.

> ***Exception** [For OSHPD 2]**:** Single-story Type V skilled nursing or intermediate care facilities utilizing wood-frame or light-steel-frame construction as defined in Health and Safety Code Section 129725, which shall comply with CBC Chapter 34 and any applicable amendments therein.*

Exception: Existing bleachers, grandstands and folding and telescopic seating shall comply with ICC 300-02.

3401*A*.2 Maintenance. Buildings and structures, and parts thereof, shall be maintained in a safe and sanitary condition. Devices or safeguards which are required by this code shall be maintained in conformance with the code edition under which installed. The owner or the owner's designated agent shall be responsible for the maintenance of buildings and structures. To determine compliance with this subsection, the building official shall have the authority to require a building or structure to be re-inspected. The requirements of this chapter shall not provide the basis for removal or abrogation of fire protection and safety systems and

devices in existing structures.

3401*A*.3 Compliance with other codes. Alterations, repairs, additions and changes of occupancy to existing structures shall comply with the provisions for alterations, repairs, additions and changes of occupancy in the *California ~~International~~ Fire Code*, ~~*International Fuel Gas Code,*~~ *California ~~International~~ Mechanical Code*, *California ~~International~~ Plumbing Code*, ~~*International Property Maintenance Code, International Private Sewage Disposal Code*~~, ~~*International Residential Code*~~ and *California ~~ICC~~ Electrical Code*.

SECTION 3402*A* DEFINITIONS

3402*A*.1 Definitions. The following term shall, for the purposes of this chapter and as used elsewhere in the code, have the following meaning. *Definition provided in section 1613A.2, ASCE 7 section 11.2 and Chapter 6 of Title 24 Part 1 - Building Standards Administrative Code shall apply when appropriate in addition to terms defined in this section*:

(Relocated from 1627A, 2001CBC) ***APPROVED EXISTING BUILDING****. Any building originally constructed in compliance with the requirements of 1973 or subsequent edition of California Building Code.*

(Relocated from 1627A, 2001CBC) ***ASSOCIATED STRUCTURAL ALTERATIONS*** *means any change affecting existing structural elements or requiring new structural elements for vertical or lateral support of an otherwise nonstructural alteration.*

(Relocated from 1641A, 2001CBC) ***DESIGN*** *is the procedure that includes both the evaluation and retrofit design of an existing element and design of new element.*

(Relocated from 1641A, 2001CBC) ***DESIGN EARTHQUAKE*** *is the earthquake ground motion defined in section ~~3413A.2.3.2~~ 3413A.2.2.*

(Relocated from 1641A, 2001CBC) ***ESSENTIAL LIFE SAFETY*** *is the retrofit or repair of a structure to a goal of essential life safety as a level of expected structural performance taken to mean that occupants will be able to exit the structure safely following an earthquake. It does not mean that they will be uninjured or not be in need of medical attention. A structure is presumed to achieve this level of performance where, although significant damage to the structure may have occurred, some margin against either total or partial structural collapse remains, even though damage may not be economical to repair; major structural elements have not become dislodged or fallen so as to pose a life-safety threat; and, nonstructural systems or elements, which are heavy enough to cause severe injuries either within or outside the building, have not become dislodged so as to pose a life-safety threat. This level of structural performance is equivalent to SPC-2.*

(Relocated from 1627A, 2001CBC) ***INCIDENTAL STRUCTURAL ALTERATIONS OR ADDITIONS*** *are alterations or additions which would not reduce the story lateral shear force-resisting capacity by more than 5 percent or increase the story shear by more than 5 percent in any existing story.*

(Relocated from 1641A, 2001CBC) ***IMMEDIATE OCCUPANCY -*** *The retrofit or repair of a structure to a goal of immediate occupancy as a level of expected performance is taken to mean the post-earthquake damage state in which limited structural and non-structural damage has occurred. The original strength and stiffness of structure is substantially retained, with minor cracking and yielding of structural elements. Basic access and life safety systems, including doors, stairways, elevators, emergency lighting, fire alarms and suppression systems, remain operable, provided that utilities are available. It is expected that occupants could safely remain in the building, although normal use may be impaired and some clean-up, inspection and limited structural and non-structural repairs may be required. This level of expected structural performance is equivalent to SPC-3 through SPC-5.*

(Relocated from 1627A, 2001CBC) ***MAJOR STRUCTURAL ALTERATIONS OR ADDITIONS*** *are those alterations or additions of greater extent than minor structural alterations or additions.*

(Relocated from 1627A, 2001CBC) ***MINOR STRUCTURAL ALTERATIONS OR ADDITIONS*** *are alterations or additions of greater extent than incidental structural additions or alterations which would not reduce the story shear lateral-force-resisting capacity by more than 10 percent or increase base shear by more than 10 percent.*

(Relocated from 1627A, 2001CBC) ***NONREQUIRED STRUCTURAL ALTERATION*** *is any alteration of existing structural element or provision of new structural elements which is not necessary for vertical or lateral support of other work and is initiated by the applicant primarily for the purpose of increasing the vertical or lateral load-carrying strength or stiffness of an existing building.*

(Relocated from 1627A, 2001CBC) ***NONSTRUCTURAL ALTERATION*** *is any alteration which neither affects existing structural elements nor requires new structural elements for vertical or lateral support and which does not increase the lateral shear force in any story by more than 5 percent.*

NONSTRUCTURAL PERFORMANCE CATEGORY (NPC) *are the building performance categories for Hospital Buildings defined in Table 11.1of California Building Standards Administrative Code (Part 1, Title 24 CCR), Chapter 6.*

(Relocated from 1641A, 2001CBC) ***PEER REVIEW*** *refers to procedure contained in Section 3414A.*

PRIMARY FUNCTION. A primary function is a major activity for which the facility is intended. Areas that contain a primary function include, but are not limited to, the customer service lobby of a bank, the dining area of a cafeteria, the meeting rooms in a conference center, as well as offices and other work areas in which the activities of the public accommodation or other private entity using the facility are carried out. Mechanical rooms, boiler rooms, supply storage rooms, employee lounges or locker rooms, janitorial closets, entrances, corridors and restrooms are not areas containing a primary function.

(Relocated from 1627A, 2001CBC) ***RECONSTRUCTION*** *means rebuilding of any existing building to bring it into full compliance with these regulations.*

(Relocated from 1641A, 2001CBC) ***REPAIR*** *as used in this division means all the design and construction work affecting existing or requiring new structural elements undertaken to restore or enhance the structural and nonstructural load resisting system participating in lateral response of a structure primarily intended to correct the effects of deterioration or impending or actual failure, regardless of cause.*

STRUCTURAL PERFORMANCE CATEGORY (SPC) *are the building performance categories for Hospital Buildings defined in Table 2.5.3 of California Building Standards Administrative Code (Part 1, Title 24 CCR), Chapter 6.*

TECHNICALLY INFEASIBLE. An alteration of a building or a facility that has little likelihood of being accomplished because the existing structural conditions require the removal or alteration of a load-bearing member that is an essential part of the structural frame, or because other existing physical or site constraints prohibit modification or addition of elements, spaces or features which are in full and strict compliance with the minimum requirements for new construction and which are necessary to provide accessibility.

SECTION 3403*A* ADDITIONS, ALTERATIONS OR REPAIRS

3403*A*.1 Existing buildings or structures. Additions or alterations to any building or structure shall comply with the requirements of the code for new construction. Additions or alterations shall not be made to an existing building or structure that will cause the existing building or structure to be in violation of any provisions of this code. An existing building plus additions shall comply with the height and area provisions of Chapter 5. Portions of the structure not altered and not affected by the alteration are not required to comply with the code requirements for a new structure.

3403*A*.1.1 Flood hazard areas. For buildings and structures in flood hazard areas established in Section 1612A.3, any additions, alterations or repairs that constitute substantial improvement of the existing structure, as defined in Section 1612A.2, shall comply with the flood design requirements for new construction, and all aspects of the existing structure shall be brought into compliance with the requirements for new construction for flood design.

3403*A*.2 Structural. Additions or alterations to an existing structure shall not increase the force in any structural element by more than 5 percent, unless the increased forces on the element are still in compliance with the code for new structures, nor shall the strength of any structural element be decreased to less than that required by this code for new structures. Where repairs are made to structural elements of an existing building, and uncovered structural elements are found to be unsound or otherwise structurally deficient, such elements shall be made to conform to the requirements for new structures.

3403*A*.2.1 Existing live load. Where an existing structure heretofore is altered or repaired, the minimum design loads for the structure shall be the loads applicable at the time of erection, provided that public safety is not endangered thereby.

3403*A*.2.2 Live load reduction. If the approved live load is less than required by Section 1607A, the areas designed for the reduced live load shall be posted in with the approved load. Placards shall be of an approved design.

3403*A*.2.3 Seismic. Additions, alterations or modification or change of occupancy of existing buildings shall be in accordance with this section for the purposes of seismic considerations.

3403*A*.2.3.1 Additions to existing buildings. An addition that is structurally independent from an existing structure shall be designed and constructed with the seismic requirements for new structures. An addition that is not structurally independent from an existing structure shall be designed and constructed such that the entire structure conforms to the seismic-force-resistance requirements for new structures unless the following conditions are satisfied:

1. The addition conforms with the requirements for new structures,
2. The addition does not increase the seismic forces in any structural element of the existing structure by more than *5* ~~*10*~~ percent cumulative since the original construction, unless the element has the capacity to resist the increased forces determined in accordance with ASCE 7, and
3. Additions do not decrease the seismic resistance of any structural element of the existing structure by more than *5* ~~*10*~~ percent cumulative since the original construction, unless the element has the capacity to resist the forces determined in accordance with ASCE 7. If the building's seismic base shear capacity has been increased since the original construction, the percent change in base shear may be calculated relative to the increased value.

3403*A*.2.3.2 Alterations. Alterations are permitted to be made to any structure without requiring the structure to comply with Section 1613A, provided the alterations conform to the requirements for a new structure. Alterations that increase the seismic force in any existing structural element by more than *5* ~~*10*~~ percent cumulative since the original construction or decrease the design strength of any existing structural element to resist seismic forces by more than 5 percent cumulative since the original construction shall not be permitted unless the entire seismic-force-resisting system is determined to conform to ASCE 7 for a new structure. If the building's seismic base shear capacity has been increased since the original construction, the percent change in base shear may be calculated relative to the increased value.

Exception: Alterations to existing structural elements or additions of new structural elements that are not required by ASCE 7 and are initiated for the purpose of increasing the strength or stiffness of the seismic-force-resisting system of an existing structure need not be designed for forces conforming to ASCE 7, provided that an engineering analysis is submitted indicating the following:

1. The design strength of existing structural elements required to resist seismic forces is not reduced.
2. The seismic force to required existing structural elements is not increased beyond their design strength.
3. New structural elements are detailed and connected to the existing structural elements as required by Chapter 16A.
4. New or relocated nonstructural elements are detailed and connected to existing or new structural elements as required by Chapter 16A.
5. The alterations do not create a structural irregularity as defined in ASCE 7 or make an existing structural irregularity more severe.
6. The alterations do not result in the creation of an unsafe condition.

3403A.2.3.3 ADOPTION: *Except for the modifications as set forth in Sections 3411A through 3414A all additions, alterations, repairs and seismic retrofit to existing structures or portions thereof may be designed and constructed in accordance with the provisions of FEMA 356.*

3403A.2.3.3.1 *All Reference Standards listed in FEMA 356 shall be replaced by Referenced Standards listed in Chapter 35 of this code.*

3403A.2.3.3.2 *Use of Material Properties based on Historical Information as default values shall not be permitted.*

3403A.2.3.3.3 *The selection of a particular analysis procedure from FEMA 356 shall be subject to the approval of the enforcement agent.*

3403A.2.3.3.4 *Prior to implementation of FEMA 356 non-linear procedures – the ground motion, analysis and design methods, material assumptions and acceptance criteria proposed by the engineer shall be peer reviewed and / or reviewed by the enforcement agent as provided in section 3414A.*

3403A.2.3.3.5 *The analysis, conclusion and design decisions shall be reviewed and accepted by the peer reviewer(s) and / or enforcement agent.*

3403A.2.3.3.6 Structural observation, testing and inspections. *Construction testing, inspection and structural observation requirements shall be as required for new construction.*

3403*A*.3 Nonstructural. Nonstructural alterations or repairs to an existing building or structure are permitted to be made of the same materials of which the building or structure is constructed, provided that they do not adversely affect any structural member or the fire-resistance rating of any part of the building or structure.

3403*A*.4 Stairways. An alteration or the replacement of an existing stairway in an existing structure shall not be required to comply with the requirements of a new stairway as outlined in Section 1009 where the existing space and construction will not allow a reduction in pitch or slope.

SECTION 3404*A* FIRE ESCAPES

3404*A*.1 Where permitted. Fire escapes shall be permitted only as provided for in Sections 3404A.1.1 through 3404A.1.4.

3404*A*.1.1 New buildings. Fire escapes shall not constitute any part of the required means of egress in new buildings.
3404*A*.1.2 Existing fire escapes. Existing fire escapes shall be continued to be accepted as a component in the means of egress in existing buildings only.
3404*A*.1.3 New fire escapes. New fire escapes for existing buildings shall be permitted only where exterior stairs cannot be utilized due to lot lines limiting stair size or due to the sidewalks, alleys or roads at grade level. New fire escapes shall not incorporate ladders or access by windows.
3404*A*.1.4 Limitations. Fire escapes shall comply with this section and shall not constitute more than 50 percent of the required number of exits nor more than 50 percent of the required exit capacity.

3404*A*.2 Location. Where located on the front of the building and where projecting beyond the building line, the lowest landing shall not be less than 7 feet (2134 mm) or more than 12 feet (3658 mm) above grade, and shall be equipped with a counterbalanced stairway to the street. In alleyways and thoroughfares less than 30 feet (9144 mm) wide, the clearance under the lowest landing shall not be less than 12 feet (3658 mm).

3404*A*.3 Construction. The fire escape shall be designed to support a live load of 100 pounds per square foot (4788 Pa) and shall be constructed of steel or other approved noncombustible materials. Fire escapes constructed of wood not less than nominal 2 inches (51 mm) thick are permitted on buildings of Type 5 construction. Walkways and railings located over or supported by combustible roofs in buildings of Type 3 and 4 construction are permitted to be of wood not less than nominal 2 inches (51 mm) thick.

3404*A*.4 Dimensions. Stairs shall be at least 22 inches (559 mm) wide with risers not more than, and treads not less than, 8 inches (203 mm) and landings at the foot of stairs not less than 40 inches (1016 mm) wide by 36 inches (914 mm) long, located not more than 8 inches (203 mm) below the door.

3404*A*.5 Opening protectives. Doors and windows along the fire escape shall be protected with $^{3}/_{4}$-hour opening protectives.

SECTION 3405*A* GLASS REPLACEMENT

3405*A*.1 Conformance. The installation or replacement of glass shall be as required for new installations.

SECTION 3406*A* CHANGE OF OCCUPANCY

3406*A*.1 Conformance. No change shall be made in the use or occupancy of any building that would place the building in a different division of the same group of occupancy or in a different group of occupancies, unless such building is made to comply with the requirements of this code for such division or group of occupancy. Subject to the approval of the building official, the use or occupancy of existing buildings shall be permitted to be changed and the building is allowed to be occupied for purposes in other groups without conforming to all the requirements of this code for those groups, provided the new or proposed use is less hazardous, based on life and fire risk, than the existing use.
3406*A*.2 Certificate of occupancy. A certificate of occupancy shall be issued where it has been determined that the requirements for the new occupancy classification have been met.

3406*A*.3 Stairways. Existing stairways in an existing structure shall not be required to comply with the requirements of a new stairway as outlined in Section 1009 where the existing space and construction will not allow a reduction in pitch or slope.

3406*A*.4 Change of occupancy. When a change of occupancy results in a structure being reclassified to a higher occupancy category, the structure shall conform to the seismic requirements for a new structure.

Exceptions:

1. Specific seismic detailing requirements of this code or ASCE 7 for a new structure shall not be required to be met where it can be shown that the level of performance and seismic safety is equivalent to that of a new structure. Such

analysis shall consider the regularity, overstrength, redundancy and ductility of the structure within the context of the existing and retrofit (if any) detailing provided.
2. *Not permitted by OSHPD.* ~~*When a change of use results in a structure being reclassified from Occupancy Category I or II to Occupancy Category III and the structure is located in a seismic map area where SDS< 0.33, compliance with the seismic requirements of this code and ASCE 7 are not required.*~~

SECTION 3407*A* HISTORIC BUILDINGS

3407*A*.1 Historic buildings. The provisions of this code relating to the construction, repair, alteration, addition, restoration and movement of structures, and change of occupancy shall not be mandatory for historic buildings where such buildings are judged by the building official to not constitute a distinct life safety hazard.

3407*A*.2 Flood hazard areas. Within flood hazard areas established in accordance with Section 1612A.3, where the work proposed constitutes substantial improvement as defined in Section 1612A.2, the building shall be brought into conformance with Section 1612A.

Exception: Historic buildings that are:

1. Listed or preliminarily determined to be eligible for listing in the National Register of Historic Places; or
2. Determined by the Secretary of the U.S. Department of Interior as contributing to the historical significance of a registered historic district or a district preliminarily determined to qualify as an historic district; or
3. Designated as historic under a state or local historic preservation program that is approved by the Department of Interior.

SECTION 3408*A* MOVED STRUCTURES

3408*A*.1 Conformance. Structures moved into or within the jurisdiction shall comply with the provisions of this code for new structures.

SECTION 3409*A* ACCESSIBILITY FOR EXISTING BUILDINGS

3409*A*.1 Scope. The provisions of Sections 3409*A*.1 through 3409A.9 apply to maintenance, change of occupancy, additions and alterations to existing buildings, including those identified as historic buildings.
Exception: Type B dwelling or sleeping units required by Section 1107 are not required to be provided in existing buildings and facilities.

3409*A*.2 Maintenance of facilities. A building, facility or element that is constructed or altered to be accessible shall be maintained accessible during occupancy.

3409*A*.3 Extent of application. An alteration of an existing element, space or area of a building or facility shall not impose a requirement for greater accessibility than that which would be required for new construction.

Alterations shall not reduce or have the effect of reducing accessibility of a building, portion of a building or facility.

3409*A*.4 Change of occupancy. Existing buildings, or portions thereof, that undergo a change of group or occupancy shall have all of the following accessible features:

1. At least one accessible building entrance.
2. At least one accessible route from an accessible building entrance to primary function areas.
3. Signage complying with Section 1110.
4. Accessible parking, where parking is being provided.
5. At least one accessible passenger loading zone, when loading zones are provided.
6. At least one accessible route connecting accessible parking and accessible passenger loading zones to an accessible entrance.

Where it is technically infeasible to comply with the new construction standards for any of these requirements for a change of group or occupancy, the above items shall conform to the requirements to the maximum extent technically feasible. Change of group or occupancy that incorporates any alterations or additions shall comply with this section and Sections 3409A.5, 3409A.6, 3409A.7 and 3409A.8.

3409*A*.5 Additions. Provisions for new construction shall apply to additions. An addition that affects the accessibility to, or contains an area of, a primary function shall comply with the requirements in Section 3409A.7.

3409*A*.6 Alterations. A building, facility or element that is altered shall comply with the applicable provisions in Chapter 11 and ICC A117.1, unless technically infeasible. Where compliance with this section is technically infeasible, the alteration shall provide access to the maximum extent technically feasible.

Exceptions:

1. The altered element or space is not required to be on an accessible route, unless required by Section 3409A.7.
2. Accessible means of egress required by Chapter 10 are not required to be provided in existing buildings and facilities.
3. The alteration to Type A individually owned dwelling units within a Group R-2 occupancy shall meet the provision for a Type B dwelling unit and shall comply with the applicable provisions in Chapter 11 and ICC/ANSI A117.1.

3409*A*.7 Alterations affecting an area containing a primary function. Where an alteration affects the accessibility to, or contains an area of primary function, the route to the primary function area shall be accessible. The accessible route to the primary function area shall include toilet facilities or drinking fountains serving the area of primary function.

Exceptions:

1. The costs of providing the accessible route are not required to exceed 20 percent of the costs of the alterations affecting the area of primary function.
2. This provision does not apply to alterations limited solely to windows, hardware, operating controls, electrical outlets and signs.
3. This provision does not apply to alterations limited solely to mechanical systems, electrical systems, installation or alteration of fire protection systems and abatement of hazardous materials.
4. This provision does not apply to alterations undertaken for the primary purpose of increasing the accessibility of an existing building, facility or element.

3409*A*.8 Scoping for alterations. The provisions of Sections 3409A.8.1 through 3409A.8.12 shall apply to alterations to existing buildings and facilities.

3409*A*.8.1 Entrances. Accessible entrances shall be provided in accordance with Section 1105.

Exception: Where an alteration includes alterations to an entrance, and the building or facility has an accessible entrance, the altered entrance is not required to be accessible, unless required by Section 3409A.7. Signs complying with Section 1110 shall be provided.

3409*A*.8.2 Elevators. Altered elements of existing elevators shall comply with ASME A17.1 and ICC A117.1. Such elements shall also be altered in elevators programmed to respond to the same hall call control as the altered elevator.

3409*A*.8.3 Platform lifts. Platform (wheelchair) lifts complying with ICC A117.1 and installed in accordance with ASME A18.1 shall be permitted as a component of an accessible route.

3409*A*.8.4 Stairs and escalators in existing buildings. In alterations where an escalator or stair is added where none existed previously, an accessible route shall be provided in accordance with Sections 1104.4 and 1104.5.

3409*A*.8.5 Ramps. Where steeper slopes than allowed by Section 1010.2 are necessitated by space limitations, the slope of ramps in or providing access to existing buildings or facilities shall comply with Table 3409*A*.8.5.

TABLE 3409*A*.8.5 RAMPS

SLOPE	MAXIMUM RISE
Steeper than 1:10 but not steeper than 1:8	3 inches
Steeper than 1:12 but not steeper than 1:10	6 inches

For SI: 1 inch = 25.4 mm.

3409*A*.8.6 Performance areas. Where it is technically infeasible to alter performance areas to be on an accessible route, at least one of each type of performance area shall be made accessible.

3409*A*.8.7 Dwelling or sleeping units. Where I-1, I-2 , I-3, R-1, R-2 or R-4 dwelling or sleeping units are being altered or added, the requirements of Section 1107 for Accessible or Type A units and Section 907 for accessible alarms apply only to the quantity of spaces being altered or added.

3409*A*.8.8 Jury boxes and witness stands. In alterations, accessible wheelchair spaces are not required to be located within the defined area of raised jury boxes or witness stands and shall be permitted to be located outside these spaces where the ramp or lift access restricts or projects into the means of egress.

3409*A*.8.9 Toilet rooms. Where it is technically infeasible to alter existing toilet and bathing facilities to be accessible, an accessible unisex toilet or bathing facility is permitted. The unisex facility shall be located on the same floor and in the same area as the existing facilities.

3409*A*.8.10 Dressing, fitting and locker rooms. Where it is technically infeasible to provide accessible dressing, fitting or locker rooms at the same location as similar types of rooms, one accessible room on the same level shall be provided. Where separate-sex facilities are provided, accessible rooms for each sex shall be provided. Separate-sex facilities are not required where only unisex rooms are provided.

3409*A*.8.11 Check-out aisles. Where check-out aisles are altered, at least one of each check-out aisle serving each function shall be made accessible until the number of accessible check-out aisles complies with Section 1109.12.2.

3409*A*.8.12 Thresholds. The maximum height of thresholds at doorways shall be $^{3}/_{4}$ inch (19.1 mm). Such thresholds shall have beveled edges on each side.

3409*A*.9 Historic buildings. These provisions shall apply to buildings and facilities designated as historic structures that undergo alterations or a change of occupancy, unless technically infeasible. Where compliance with the requirements for accessible routes, ramps, entrances or toilet facilities would threaten or destroy the historic significance of the building or facility, as determined by the authority having jurisdiction, the alternative requirements of Sections 3409A.9.1 through 3409A.9.4 for that element shall be permitted.

3409*A*.9.1 Site arrival points. At least one accessible route from a site arrival point to an accessible entrance shall be provided.

3409*A*.9.2 Multilevel buildings and facilities. An accessible route from an accessible entrance to public spaces on the level of the accessible entrance shall be provided.

3409*A*.9.3 Entrances. At least one main entrance shall be accessible.

Exceptions:
1. If a main entrance cannot be made accessible, an accessible nonpublic entrance that is unlocked while the building is occupied shall be provided; or
2. If a main entrance cannot be made accessible, a locked accessible entrance with a notification system or remote monitoring shall be provided.

Signs complying with Section 1110 shall be provided at the primary entrance and the accessible entrance.

3409*A*.9.4 Toilet and bathing facilities. Where toilet rooms are provided, at least one accessible toilet room complying with Section 1109.2.1 shall be provided.

SECTION 3410*A* COMPLIANCE ALTERNATIVES [EB]

3410*A*.1 Compliance. The provisions of this section are intended to maintain or increase the current degree of public safety, health and general welfare in existing buildings while permitting repair, alteration, addition and change of occupancy without requiring full compliance with Chapters 2 through 33, or Sections 3401A.3, and 3403A through 3407A, except where compliance with other provisions of this code is specifically required in this section.

3410*A*.2 Applicability. Structures existing prior to *January 1, 2008* ~~*[DATE TO BE INSERTED BY THE JURISDICTION.*~~

~~*NOTE: IT IS RECOMMENDED THAT THIS DATE COINCIDE WITH THE EFFECTIVE DATE OF BUILDING CODES WITHIN THE JURISDICTION],*~~ in which there is work involving additions, alterations or changes of occupancy shall be made to conform to the requirements of this section or the provisions of Sections 3403A through 3407A. The provisions in Sections 3410A.2.1 through 3410A.2.5 shall apply to existing occupancies that will continue to be, or are proposed to be, in Groups A, B, E, F, M, R, S and U. These provisions shall not apply to buildings with occupancies in Group H or I.

3410*A*.2.1 Change in occupancy. Where an existing building is changed to a new occupancy classification and this section is applicable, the provisions of this section for the new occupancy shall be used to determine compliance with this code.

3410*A*.2.2 Partial change in occupancy. Where a portion of the building is changed to a new occupancy classification, and that portion is separated from the remainder of the building with fire barriers or horizontal assemblies having a fire-resistance rating as required by Table 508.3.3 for the separate occupancies, or with approved compliance alternatives, the portion changed shall be made to conform to the provisions of this section.

Where a portion of the building is changed to a new occupancy classification, and that portion is not separated from the remainder of the building with fire barriers or horizontal assemblies having a fire-resistance rating as required by Table 508.3.3 for the separate occupancies, or with approved compliance alternatives, the provisions of this section which apply to each occupancy shall apply to the entire building. Where there are conflicting provisions, those requirements which secure the greater public safety shall apply to the entire building or structure.

3410*A*.2.3 Additions. Additions to existing buildings shall comply with the requirements of this code for new construction. The combined height and area of the existing building and the new addition shall not exceed the height and area allowed by Chapter 5. Where a fire wall that complies with Section 705 is provided between the addition and the existing building, the addition shall be considered a separate building.

3410*A*.2.4 Alterations and repairs. *Not permitted by OSHPD.* ~~*An existing building or portion thereof, which does not comply with the requirements of this code for new construction, shall not be altered or repaired in such a manner that results in the building being less safe or sanitary than such building is currently. If, in the alteration or repair, the current level of safety or sanitation is to be reduced, the portion altered or repaired shall conform to the requirements of Chapters 2 through 12 and Chapters 14 through 33.*~~

3410*A*.2.4.1 Flood hazard areas. For existing buildings located in flood hazard areas established in Section 1612A.3, if the alterations and repairs constitute substantial improvement of the existing building, the existing building shall be brought into compliance with the requirements for new construction for flood design.

3410*A*.2.5 Accessibility requirements. All portions of the buildings proposed for change of occupancy shall conform to the accessibility provisions of Chapter 11.

3410*A*.3 Acceptance. For repairs, alterations, additions and changes of occupancy to existing buildings that are evaluated in accordance with this section, compliance with this section shall be accepted by the building official.

3410*A*.3.1 Hazards. Where the building official determines that an unsafe condition exists, as provided for in Section 115, such unsafe condition shall be abated in accordance with Section 115.

3410*A*.3.2 Compliance with other codes. Buildings that are evaluated in accordance with this section shall comply with the *California* ~~*International*~~ *Fire Code*. ~~*and International Property Maintenance Code.*~~

3410*A*.4 Investigation and evaluation. For proposed work covered by this section, the building owner shall cause the existing building to be investigated and evaluated in accordance with the provisions of this section.

3410*A*.4.1 Structural analysis. The owner shall have a structural analysis of the existing building made to determine adequacy of structural systems for the proposed alteration, addition or change of occupancy. The existing building shall be capable of supporting the minimum load requirements of Chapter 16A.
3410*A*.4.2 Submittal. The results of the investigation and evaluation as required in Section 3410A.4, along with proposed compliance alternatives, shall be submitted to the building official.

3410*A*.4.3 Determination of compliance. The building official shall determine whether the existing building, with the proposed addition, alteration or change of occupancy, complies with the provisions of this section in accordance with the evaluation process in Sections 3410A.5 through 3410A.9.

3410*A*.5 Evaluation. The evaluation shall be comprised of three categories: fire safety, means of egress and general safety, as defined in Sections 3410A.5.1 through 3410A.5.3.

3410A.5.1 Fire safety. Included within the fire safety category are the structural fire resistance, automatic fire detection, fire alarm and fire suppression system features of the facility.
3410A.5.2 Means of egress. Included within the means of egress category are the configuration, characteristics and support features for means of egress in the facility.
3410A.5.3 General safety. Included within the general safety category are the fire safety parameters and the means of egress parameters.

3410A.6 Evaluation process. The evaluation process specified herein shall be followed in its entirety to evaluate existing buildings. Table 3410A.7 shall be utilized for tabulating the results of the evaluation. References to other sections of this code indicate that compliance with those sections is required in order to gain credit in the evaluation herein outlined. In applying this section to a building with mixed occupancies, where the separation between the mixed occupancies does not qualify for any category indicated in Section 3410A.6.16, the score for each occupancy shall be determined and the lower score determined for each section of the evaluation process shall apply to the entire building.

Where the separation between the mixed occupancies qualifies for any category indicated in Section 3410A.6.16, the score for each occupancy shall apply to each portion of the building based on the occupancy of the space.

3410A.6.1 Building height. The value for building height shall be the lesser value determined by the formula in Section 3410A.6.1.1. Chapter 5 shall be used to determine the allowable height of the building, including allowable increases due to automatic sprinklers as provided for in Section 504.2. Subtract the actual building height from the allowable and divide by 12 $^1/_2$feet. Enter the height value and its sign (positive or negative) in Table 3410A.7 under Safety Parameter 3410A.6.1, Building Height, for fire safety, means of egress and general safety. The maximum score for a building shall be 10.
3410A.6.1.1 Height formula. The following formulas shall be used in computing the building height value.

$$\text{Height value, feet} = \frac{(AH) - (EBH)}{12.5} \times CF$$

$$\text{Height value, stories} = (AS - EBS) \times CF$$

(Equation 34A-1)

where:

AH = Allowable height in feet from Table 503.

EBH = Existing building height in feet.

AS = Allowable height in stories from Table 503.

EBS = Existing building height in stories.

CF = 1 if (*AH*) - (*EBH*) is positive.

CF = Construction-type factor shown in Table 3410A.6.6(2) if (*AH*) - (*EBH*) is negative.

Note: Where mixed occupancies are separated and individually evaluated as indicated in Section 3410A.6, the values AH, AS, EBH and EBS shall be based on the height of the fire area of the occupancy being evaluated.

3410A.6.2 Building area. The value for building area shall be determined by the formula in Section 3410A.6.2.2. Section 503 and the formula in Section 3410A.6.2.1 shall be used to determine the allowable area of the building. This shall include any allowable increases due to open perimeter and automatic sprinklers as provided for in Section 506. Subtract the actual building area from the allowable area and divide by 1,200 square feet (112 m2). Enter the area value and its sign (positive or negative) in Table 3410A.7 under Safety Parameter 3410A.6.2, Building Area, for fire safety, means of egress and general safety. In

determining the area value, the maximum permitted positive value for area is 50 percent of the fire safety score as listed in Table 3410A.8, Mandatory Safety Scores.

3410A.6.2.1 Allowable area formula. The following formula shall be used in computing allowable area:

$$AA = \frac{(SP + OP + 100) \times (\text{area, Table 503})}{100}$$

(Equation 34A-2)

where:

AA = Allowable area.

SP = Percent increase for sprinklers (Section 506.3).

OP = Percent increase for open perimeter (Section 506.2).

3410A.6.2.2 Area formula. The following formula shall be used in computing the area value. Determine the area value for each occupancy fire area on a floor-by-floor basis. For each occupancy, choose the minimum area value of the set of values obtained for the particular occupancy.

$$\text{Area value } i = \frac{\text{Allowable area}_i}{1{,}200 \text{ square feet}} \left[1 - \left(\frac{\text{Actual area}_i}{\text{Allowable area}_i} + \ldots + \frac{\text{Actual area}_n}{\text{Allowable area}_n} \right) \right]$$

(Equation 34A-3)

where:

i = Value for an individual separated occupancy on a floor.

n = Number of separated occupancies on a floor.

3410A.6.3 Compartmentation. Evaluate the compartments created by fire barriers or horizontal assemblies which comply with Sections 3410A.6.3.1 and 3410A.6.3.2 and which are exclusive of the wall elements considered under Sections 3410A.6.4 and 3410A.6.5. Conforming compartments shall be figured as the net area and do not include shafts, chases, stairways, walls or columns. Using Table 3410A.6.3, determine the appropriate compartmentation value (*CV*) and enter that value into Table 3410A.7 under Safety Parameter 3410A.6.3, Compartmentation, for fire safety, means of egress and general safety.

TABLE 3410A.6.3 COMPARTMENTATION VALUES

OCCUPANCY	CATEGORIES[a]				
	a Compartment size equal to or greater than 15,000 square feet	b Compartment size of 10,000 square feet	c Compartment size of 7,500 square feet	d Compartment size of 5,000 square feet	e Compartment size of 2,500 square feet
A-1, A-3	0	6	10	14	18
A-2	0	4	10	14	18
A-4, B, E, S-2	0	5	10	15	20
F, M, R, S-1	0	4	10	16	22

For SI: 1 square foot = 0.093 m^2.

a. For areas between categories, the compartmentation value shall be obtained by linear interpolation.

3410*A*.6.3.1 Wall construction. A wall used to create separate compartments shall be a fire barrier conforming to Section 706 with a fire-resistance rating of not less than 2 hours. Where the building is not divided into more than one compartment, the compartment size shall be taken as the total floor area on all floors. Where there is more than one compartment within a story, each compartmented area on such story shall be provided with a horizontal exit conforming to Section 1022. The fire door serving as the horizontal exit between compartments shall be so installed, fitted and gasketed that such fire door will provide a substantial barrier to the passage of smoke.

3410*A*.6.3.2 Floor/ceiling construction. A floor/ceiling assembly used to create compartments shall conform to Section 711 and shall have a fire-resistance rating of not less than 2 hours.

3410*A*.6.4 Tenant and dwelling unit separations. Evaluate the fire-resistance rating of floors and walls separating tenants, including dwelling units, and not evaluated under Sections 3410A.6.3 and 3410A.6.5. Under the categories and occupancies in Table 3410A.6.4, determine the appropriate value and enter that value in Table 3410A.7 under Safety Parameter 3410*A*.6.4, Tenant and Dwelling Unit Separation, for fire safety, means of egress and general safety.

TABLE 3410*A*.6.4 SEPARATION VALUES

OCCUPANCY	CATEGORIES				
	a	b	c	d	e
A-1	0	0	0	0	1
A-2	-5	-3	0	1	3
R	-4	-2	0	2	4
A-3, A-4, B, E, F, M, S-1	-4	-3	0	2	4
S-2	-5	-2	0	2	4

3410*A*.6.4.1 Categories. The categories for tenant and dwelling unit separations are:
1. Category a — No fire partitions; incomplete fire partitions; no doors; doors not self-closing or automatic closing.
2. Category b — Fire partitions or floor assembly less than 1-hour fire-resistance rating or not constructed in accordance with Sections 708 or 711, respectively.
3. Category c — Fire partitions with 1 hour or greater fire-resistance rating constructed in accordance with Section 708 and floor assemblies with 1-hour but less than 2-hour fire-resistance rating constructed in accordance with Section 711, or with only one tenant within the fire area.
4. Category d — Fire barriers with 1-hour but less than 2-hour fire-resistance rating constructed in accordance with Section 706 and floor assemblies with 2-hour or greater fire-resistance rating constructed in accordance with Section 711.
5. Category e — Fire barriers and floor assemblies with 2-hour or greater fire-resistance rating and constructed in accordance with Sections 706 and 711, respectively.

3410*A*.6.5 Corridor walls. Evaluate the fire-resistance rating and degree of completeness of walls which create corridors serving the floor, and constructed in accordance with Section 1017. This evaluation shall not include the wall elements considered under Sections 3410A.6.3 and 3410A.6.4. Under the categories and groups in Table 3410A.6.5, determine the appropriate value and enter that value into Table 3410A.7 under Safety Parameter 3410*A*.6.5, Corridor Walls, for fire safety, means of egress and general safety.

TABLE 3410*A*.6.5 CORRIDOR WALL VALUES

OCCUPANCY	CATEGORIES			
	a	b	c[a]	d[a]
A-1	-10	-4	0	2
A-2	-30	-12	0	2

A-3, F, M, R, S-1	-7	-3	0	2
A-4, B, E, S-2	-5	-2	0	5

a. Corridors not providing at least one-half the travel distance for all occupants on a floor shall use Category b.

3410*A*.6.5.1 Categories. The categories for corridor walls are:
1. Category a — No fire partitions; incomplete fire partitions; no doors; or doors not self-closing.
2. Category b — Less than 1-hour fire-resistance rating or not constructed in accordance with Section 708.4.
3. Category c — 1-hour to less than 2-hour fire-resistance rating, with doors conforming to Section 715 or without corridors as permitted by Section 1017.
4. Category d — 2-hour or greater fire-resistance rating, with doors conforming to Section 715.

3410*A*.6.6 Vertical openings. Evaluate the fire-resistance rating of exit enclosures, hoistways, escalator openings and other shaft enclosures within the building, and openings between two or more floors. Table 3410*A*.6.6(1) contains the appropriate protection values. Multiply that value by the construction-type factor found in Table 3410*A*.6.6(2). Enter the vertical opening value and its sign (positive or negative) in Table 3410*A*.7 under Safety Parameter 3410*A*.6.6, Vertical Openings, for fire safety, means of egress and general safety. If the structure is a one-story building, enter a value of 2. Unenclosed vertical openings that conform to the requirements of Section 707 shall not be considered in the evaluation of vertical openings.

TABLE 3410*A*.6.6(1) VERTICAL OPENING PROTECTION VALUE

PROTECTION	VALUE
None (unprotected opening)	-2 times number floors connected
Less than 1 hour	-1 times number floors connected
1 to less than 2 hours	1
2 hours or more	2

TABLE 3410*A*.6.6(2) CONSTRUCTION-TYPE FACTOR

	TYPE OF CONSTRUCTION								
	IA	IB	IIA	IIB	IIIA	IIIB	IV	VA	VB
FACTOR	1.2	1.5	2.2	3.5	2.5	3.5	2.3	3.3	7

3410*A*.6.6.1 Vertical opening formula. The following formula shall be used in computing vertical opening value.

$$VO = PV \times CF$$

(Equation 34*A*-4)

VO = Vertical opening value

PV = Protection value [Table 3410.6.6(1)]

CF = Construction type factor [Table 3410.6.6(2)]

3410*A*.6.7 HVAC systems. Evaluate the ability of the HVAC system to resist the movement of smoke and fire beyond the point of origin. Under the categories in Section 3410A.6.7.1, determine the appropriate value and enter that value into Table 3410*A*.7 under Safety Parameter 3410*A*.6.7, HVAC Systems, for fire safety, means of egress and general safety.

3410*A*.6.7.1 Categories. The categories for HVAC systems are:
1. Category a — Plenums not in accordance with Section 602 of the *California* ~~*International*~~ *Mechanical Code*. -10 points.
2. Category b — Air movement in egress elements not in accordance with Section 1017.4. -5 points.
3. Category c — Both categories a and b are applicable. -15 points.
4. Category d — Compliance of the HVAC system with Section 1017.4 and Section 602 of the *California* ~~*International*~~ *Mechanical Code*. 0 points.
5. Category e — Systems serving one story; or a central boiler/chiller system without ductwork connecting two or more stories. 5 points.

3410*A*.6.8 Automatic fire detection. Evaluate the smoke detection capability based on the location and operation of automatic fire detectors in accordance with Section 907 and the *California* ~~*International*~~ *Mechanical Code.* Under the categories and occupancies in Table 3410*A*.6.8, determine the appropriate value and enter that value into Table 3410*A*.7 under Safety Parameter 3410*A*.6.8, Automatic Fire Detection, for fire safety, means of egress and general safety.

TABLE 3410*A*.6.8 AUTOMATIC FIRE DETECTION VALUES

OCCUPANCY	CATEGORIES				
	a	b	c	d	e
A-1, A-3, F, M, R, S-1	-10	-5	0	2	6
A-2	-25	-5	0	5	9
A-4, B, E, S-2	-4	-2	0	4	8

3410*A*.6.8.1 Categories. The categories for automatic fire detection are:
1. Category a — None.
2. Category b — Existing smoke detectors in HVAC systems and maintained in accordance with the *California* ~~*International*~~ *Fire Code*.
3. Category c — Smoke detectors in HVAC systems. The detectors are installed in accordance with the requirements for new buildings in the *California* ~~*International*~~ *Mechanical Code*.
4. Category d — Smoke detectors throughout all floor areas other than individual sleeping units, tenant spaces and dwelling units.
5. Category e — Smoke detectors installed throughout the fire area.

3410*A*.6.9 Fire alarm systems. Evaluate the capability of the fire alarm system in accordance with Section 907. Under the categories and occupancies in Table 3410*A*.6.9, determine the appropriate value and enter that value into Table 3410*A*.7 under Safety Parameter 3410*A*.6.9, Fire Alarm, for fire safety, means of egress and general safety.

TABLE 3410*A*.6.9 FIRE ALARM SYSTEM VALUES

OCCUPANCY	CATEGORIES			
	a	b[a]	c	d
A-1, A-2, A-3, A-4, B, E, R	-10	-5	0	5
F, M, S	0	5	10	15

a. For buildings equipped throughout with an automatic sprinkler system, add 2 points for activation by a sprinkler water flow device.

3410*A*.6.9.1 Categories. The categories for fire alarm systems are:
1. Category a — None.
2. Category b — Fire alarm system with manual fire alarm boxes in accordance with Section 907.3 and alarm notification appliances in accordance with Section 907.9.
3. Category c — Fire alarm system in accordance with Section 907.

4. Category d — Category c plus a required emergency voice/alarm communications system and a fire command center that conforms to Section 403.8 and contains the emergency voice/alarm communications system controls, fire department communication system controls and any other controls specified in Section 911 where those systems are provided.

3410*A*.6.10 Smoke control. Evaluate the ability of a natural or mechanical venting, exhaust or pressurization system to control the movement of smoke from a fire. Under the categories and occupancies in Table 3410*A*.6.10, determine the appropriate value and enter that value into Table 3410*A*.7 under Safety Parameter 3410*A*.6.10, Smoke Control, for means of egress and general safety.

TABLE 3410*A*.6.10 SMOKE CONTROL VALUES

OCCUPANCY	CATEGORIES					
	a	b	c	d	e	f
A-1, A-2, A-3	0	1	2	3	6	6
A-4, E	0	0	0	1	3	5
B, M, R	0	2[a]	3[a]	3[a]	3[a]	4[a]
F, S	0	2[a]	2[a]	3[a]	3[a]	3[a]

a. This value shall be 0 if compliance with Category d or e in Section 3410.6.8.1 has not been obtained.

3410*A*.6.10.1 Categories. The categories for smoke control are:

1. Category a — None.
2. Category b — The building is equipped throughout with an automatic sprinkler system. Openings are provided in exterior walls at the rate of 20 square feet (1.86 m^2) per 50 linear feet (15 240 mm) of exterior wall in each story and distributed around the building perimeter at intervals not exceeding 50 feet (15 240 mm). Such openings shall be readily openable from the inside without a key or separate tool and shall be provided with ready access thereto. In lieu of operable openings, clearly and permanently marked tempered glass panels shall be used.
3. Category c — One enclosed exit stairway, with ready access thereto, from each occupied floor of the building. The stairway has operable exterior windows and the building has openings in accordance with Category b.
4. Category d — One smokeproof enclosure and the building has openings in accordance with Category b.
5. Category e — The building is equipped throughout with an automatic sprinkler system. Each fire area is provided with a mechanical air-handling system designed to accomplish smoke containment. Return and exhaust air shall be moved directly to the outside without recirculation to other fire areas of the building under fire conditions. The system shall exhaust not less than six air changes per hour from the fire area. Supply air by mechanical means to the fire area is not required. Containment of smoke shall be considered as confining smoke to the fire area involved without migration to other fire areas. Any other tested and approved design which will adequately accomplish smoke containment is permitted.
6. Category f — Each stairway shall be one of the following: a smokeproof enclosure in accordance with Section 1020.1.7; pressurized in accordance with Section 909.20.5; or shall have operable exterior windows.

3410*A*.6.11 Means of egress capacity and number. Evaluate the means of egress capacity and the number of exits available to the building occupants. In applying this section, the means of egress are required to conform to Sections 1003 through 1015 and 1017 through 1024 (except that the minimum width required by this section shall be determined solely by the width for the required capacity in accordance with Table 1005.1). The number of exits credited is the number that are available to each occupant of the area being evaluated. Existing fire escapes shall be accepted as a component in the means of egress when conforming to Section 3404A. Under the categories and occupancies in Table 3410A.6.11, determine the appropriate value and enter that value into Table 3410*A*.7 under Safety Parameter 3410*A*.6.11, Means of Egress Capacity, for means of egress and general safety.

TABLE 3410*A*.6.11 MEANS OF EGRESS VALUES

OCCUPANCY	CATEGORIES

	a[a]	b	c	d	e
A-1, A-2, A-3, A-4, E	-10	0	2	8	10
M	-3	0	1	2	4
B, F, S	-1	0	0	0	0
R	-3	0	0	0	0

a. The values indicated are for buildings six stories or less in height. For buildings over six stories in height, add an additional -10 points.

3410*A*.6.11.1 Categories. The categories for means of egress capacity and number of exits are:

1. Category a — Compliance with the minimum required means of egress capacity or number of exits is achieved through the use of a fire escape in accordance with Section 3404A.
2. Category b — Capacity of the means of egress complies with Section 1004 and the number of exits complies with the minimum number required by Section 1019.
3. Category c — Capacity of the means of egress is equal to or exceeds 125 percent of the required means of egress capacity, the means of egress complies with the minimum required width dimensions specified in the code and the number of exits complies with the minimum number required by Section 1019.
4. Category d — The number of exits provided exceeds the number of exits required by Section 1019. Exits shall be located a distance apart from each other equal to not less than that specified in Section 1015.2.
5. Category e — The area being evaluated meets both Categories c and d.

3410*A*.6.12 Dead ends. In spaces required to be served by more than one means of egress, evaluate the length of the exit access travel path in which the building occupants are confined to a single path of travel. Under the categories and occupancies in Table 3410A.6.12, determine the appropriate value and enter that value into Table 3410*A*.7 under Safety Parameter 3410A.6.12, Dead Ends, for means of egress and general safety.

TABLE 3410*A*.6.12 DEAD-END VALUES

OCCUPANCY	CATEGORIES[a]		
	a	b	c
A-1, A-3, A-4, B, E, F, M, R, S	-2	0	2
A-2, E	-2	0	2

a. For dead-end distances between categories, the dead-end value shall be obtained by linear interpolation.

3410*A*.6.12.1 Categories. The categories for dead ends are:

1. Category a — Dead end of 35 feet (10 670 mm) in nonsprinklered buildings or 70 feet (21 340 mm) in sprinklered buildings.
2. Category b — Dead end of 20 feet (6096 mm); or 50 feet (15 240 mm) in Group B in accordance with Section 1017.3 exception 2.
3. Category c — No dead ends; or ratio of length to width (l/w) is less than 2.5:1.

3410*A*.6.13 Maximum exit access travel distance. Evaluate the length of exit access travel to an approved exit. Determine the appropriate points in accordance with the following equation and enter that value into Table 3410*A*.7 under Safety Parameter 3410A.6.13, Maximum Exit Access Travel Distance, for means of egress and general safety. The maximum allowable exit access travel distance shall be determined in accordance with Section 1015.1.

$$\text{Points} = 20 \times \frac{\text{Maximum allowable travel distance} - \text{Maximum actual travel distance}}{\text{Max. allowable travel distance}}$$

3410A.6.14 Elevator control. Evaluate the passenger elevator equipment and controls that are available to the fire department to reach all occupied floors. Elevator recall controls shall be provided in accordance with the *California* ~~*International*~~ *Fire Code*. Under the categories and occupancies in Table 3410A.6.14, determine the appropriate value and enter that value into Table 3410A.7 under Safety Parameter 3410A.6.14, Elevator Control, for fire safety, means of egress and general safety. The values shall be zero for a single-story building.

TABLE 3410A.6.14 ELEVATOR CONTROL VALUES

ELEVATOR TRAVEL	CATEGORIES			
	a	b	c	d
Less than 25 feet of travel above or below the primary level of elevator access for emergency fire-fighting or rescue personnel	-2	0	0	+2
Travel of 25 feet or more above or below the primary level of elevator access for emergency fire-fighting or rescue personnel	-4	NP	0	+4

For SI: 1 foot = 304.8 mm.

3410A.6.14.1 Categories. The categories for elevator controls are:

1. Category a — No elevator.
2. Category b — Any elevator without Phase I and II recall.
3. Category c — All elevators with Phase I and II recall as required by the *California* ~~*International*~~ *Fire Code*.
4. Category d — All meet Category c; or Category b where permitted to be without recall; and at least one elevator that complies with new construction requirements serves all occupied floors.

3410A.6.15 Means of egress emergency lighting. Evaluate the presence of and reliability of means of egress emergency lighting. Under the categories and occupancies in Table 3410A.6.15, determine the appropriate value and enter that value into Table 3410A.7 under Safety Parameter 3410A.6.15, Means of Egress Emergency Lighting, for means of egress and general safety.

TABLE 3410A.6.15 MEANS OF EGRESS EMERGENCY LIGHTING VALUES

NUMBER OF EXITS REQUIRED BY SECTION 1010	CATEGORIES		
	a	b	c
Two or more exits	NP	0	4
Minimum of one exit	0	1	1

3410A.6.15.1 Categories. The categories for means of egress emergency lighting are:

1. Category a — Means of egress lighting and exit signs not provided with emergency power in accordance with Section 2702.

2. Category b — Means of egress lighting and exit signs provided with emergency power in accordance with Section 2702.
3. Category c — Emergency power provided to means of egress lighting and exit signs which provides protection in the event of power failure to the site or building.

3410A.6.16 Mixed occupancies. Where a building has two or more occupancies that are not in the same occupancy classification, the separation between the mixed occupancies shall be evaluated in accordance with this section. Where there is no separation between the mixed occupancies or the separation between mixed occupancies does not qualify for any of the categories indicated in Section 3410A.6.16.1, the building shall be evaluated as indicated in Section 3410A.6 and the value for mixed occupancies shall be zero. Under the categories and occupancies in Table 3410A.6.16, determine the appropriate value and enter that value into Table 3410A.7 under Safety Parameter 3410A.6.16, Mixed Occupancies, for fire safety and general safety. For buildings without mixed occupancies, the value shall be zero.

TABLE 3410A.6.16 MIXED OCCUPANCY VALUES[a]

OCCUPANCY	CATEGORIES		
	a	b	c
A-1, A-2, R	-10	0	10
A-3, A-4, B, E, F, M, S	-5	0	5

a. For fire-resistance ratings between categories, the value shall be obtained by linear interpolation.

3410A.6.16.1 Categories. The categories for mixed occupancies are:
1. Category a — Minimum 1-hour fire barriers between occupancies.
2. Category b — Fire barriers between occupancies in accordance with Section 508.3.3
3. Category c — Fire barriers between occupancies having a fire-resistance rating of not less than twice that required by Section 508.3.3

3410A.6.17 Automatic sprinklers. Evaluate the ability to suppress a fire based on the installation of an automatic sprinkler system in accordance with Section 903.3.1.1. "Required sprinklers" shall be based on the requirements of this code. Under the categories and occupancies in Table 3410A.6.17, determine the appropriate value and enter that value into Table 3410A.7 under Safety Parameter 3410A.6.17, Automatic Sprinklers, for fire safety, means of egress divided by 2 and general safety.

TABLE 3410A.6.17 SPRINKLER SYSTEM VALUES

OCCUPANCY	CATEGORIES					
	a	b	c	d	e	f
A-1, A-3, F, M, R, S-1	-6	-3	0	2	4	6
A-2	-4	-2	0	1	2	4
A-4, B, E, S-2	-12	-6	0	3	6	12

3410A.6.17.1 Categories. The categories for automatic sprinkler system protection are:
1. Category a — Sprinklers are required throughout; sprinkler protection is not provided or the sprinkler system design is not adequate for the hazard protected in accordance with Section 903.
2. Category b — Sprinklers are required in a portion of the building; sprinkler protection is not provided or the sprinkler system design is not adequate for the hazard protected in accordance with Section 903.
3. Category c — Sprinklers are not required; none are provided.
4. Category d — Sprinklers are required in a portion of the building; sprinklers are provided in such portion; the system is one which complied with the code at the time of installation and is maintained and supervised in accordance with Section 903.

5. Category e — Sprinklers are required throughout; sprinklers are provided throughout in accordance with Chapter 9.
6. Category f — Sprinklers are not required throughout; sprinklers are provided throughout in accordance with Chapter 9.

3410*A*.6.18 Incidental use. Evaluate the protection of incidental use areas in accordance with Section 508.2. Do not include those where this code requires suppression throughout the building including covered mall buildings, high-rise buildings, public garages and unlimited area buildings. Assign the lowest score from Table 3410*A*.6.18 for the building or fire area being evaluated. If there are no specific occupancy areas in the building or fire area being evaluated, the value shall be zero.

TABLE 3410*A*.6.18 INCIDENTAL USE AREA VALUES[a]

PROTECTION REQUIRED BY TABLE 302.1.1	PROTECTION PROVIDED						
	None	1 Hour	AFSS	AFSS with SP	1 Hour and AFSS	2 Hours	2 Hours and AFSS
2 Hours and AFSS	-4	-3	-2	-2	-1	-2	0
2 Hours, or 1 Hour and AFSS	-3	-2	-1	-1	0	0	0
1 Hour and AFSS	-3	-2	-1	-1	0	-1	0
1 Hour	-1	0	-1	0	0	0	0
1 Hour, or AFSS with SP	-1	0	-1	0	0	0	0
AFSS with SP	-1	-1	-1	0	0	-1	0
1 Hour or AFSS	-1	0	0	0	0	0	0

a. AFSS = Automatic fire suppression system; SP = Smoke partitions (See Section 508.2.2).

NOTE: For Table 3410.7, see next page.

3410*A*.7 Building score. After determining the appropriate data from Section 3410A.6, enter those data in Table 3410*A*.7 and total the building score.

TABLE 3410*A*.7 SUMMARY SHEET — BUILDING CODE

Existing occupancy_____ Proposed occupancy _____

Year building was constructed _____ Number of stories_____ Height in feet _____

Type of construction _____ Area per floor _____

Percentage of open perimeter _____% Percentage of height reduction _____%

Completely suppressed: Yes___ No___ Corridor wall rating _____

Compartmentation: Yes___ No___ Required door closers: Yes___ No___

Fire-resistance rating of vertical opening enclosures _____

Type of HVAC system _____, serving number of floors _____

Automatic fire detection: Yes___ No___, type and location _____

Fire alarm system:	Yes___ No___,	type _____	
Smoke control:	Yes___ No___,	type _____	
Adequate exit routes:	Yes___ No___,	Dead ends:	Yes___ No___
Maximum exit access travel distance _____		Elevator controls:	Yes___ No___
Means of egress emergency lighting:	Yes___ No___	Mixed occupancies:	Yes___ No___

SAFETY PARAMETERS	FIRE SAFETY (FS)	MEANS OF EGRESS (ME)	GENERAL SAFETY (GS)
3410A.6.1 Building Height 3410A.6.2 Building Area 3410A.6.3 Compartmentation			
3410A.6.4 Tenant and Dwelling Unit Separations 3410A.6.5 Corridor Walls 3410A.6.6 Vertical Openings			
3410A.6.7 HVAC Systems 3410A.6.8 Automatic Fire Detection 3410A.6.9 Fire Alarm System			
3410A.6.10 Smoke control 3410A.6.11 Means of Egress 3410A.6.12 Dead ends	* * * * * * * * * * * *		
3410A.6.13 Maximum Exit Access Travel Distance 3410A.6.14 Elevator Control 3410A.6.15 Means of Egress Emergency Lighting	* * * * * * * *		
3410A.6.16 Mixed Occupancies 3410A.6.17 Automatic Sprinklers 3410A.6.18 Incidental Use		* * * * ÷2 =	
Building score — total value			

* * * *No applicable value to be inserted.

3410A.8 Safety scores. The values in Table 3410A.8 are the required mandatory safety scores for the evaluation process listed in Section 3410A.6.

TABLE 3410A.8 MANDATORY SAFETY SCORES[a]

OCCUPANCY	FIRE SAFETY (MFS)	MEANS OF EGRESS (MME)	GENERAL SAFETY (MGS)
A-1	16	27	27
A-2	19	30	30
A-3	18	29	29
A-4, E	23	34	34
B	24	34	34
F	20	30	30

M	19	36	36
R	17	34	34
S-1	15	25	25
S-2	23	33	33

a. MFS = Mandatory Fire Safety;

MME = Mandatory Means of Egress;

MGS = Mandatory General Safety.

3410*A*.9 Evaluation of building safety. The mandatory safety score in Table 3410*A*.8 shall be subtracted from the building score in Table 3410*A*.7 for each category. Where the final score for any category equals zero or more, the building is in compliance with the requirements of this section for that category. Where the final score for any category is less than zero, the building is not in compliance with the requirements of this section.

TABLE 3410*A*.9 EVALUATION FORMULAS[a]

FORMULA	T.3410.7			T.3410.8	SCORE	PASS	FAIL
FS-MFS ≥ 0	_____	(FS)	~	_____ (MFS) =	_____	_____	_____
ME-MME ≥ 0	_____	(ME)	~	_____ (MME) =	_____	_____	_____
GS-MGS ≥ 0	_____	(GS)	~	_____ (MGS) =	_____	_____	_____

a. FS = Fire Safety MFS = Mandatory Fire Safety

ME = Means of Egress MME = Mandatory Means of Egress

GS = General Safety MGS = Mandatory General Safety

3410*A*.9.1 Mixed occupancies. For mixed occupancies, the following provisions shall apply:

1. Where the separation between mixed occupancies does not qualify for any category indicated in Section 3410A.6.16, the mandatory safety scores for the occupancy with the lowest general safety score in Table 3410*A*.8 shall be utilized (see Section 3410A.6.)
2. Where the separation between mixed occupancies qualifies for any category indicated in Section 3410A.6.16, the mandatory safety scores for each occupancy shall be placed against the evaluation scores for the appropriate occupancy.

(Relocated from 1638A, 2001CBC) ***SECTION 3411A ~~1638A [FOR OSHPD 1 & 4]~~ - ADDITIONS, ALTERATIONS, REPAIRS AND SEISMIC RETROFIT TO EXISTING BUILDINGS OR STRUCTURES***

Existing hospital buildings (as defined in Section 7-111 Part 1, Title 24, Building Standards Administrative Code).

NOTE: *Alterations to lateral shear force-resisting capacity and story lateral shear forces shall be considered to be cumulative for purposes of defining incidental or minor alterations or additions. The percentage of cumulative changes shall be based on as built conditions existing on March 7, 1973 or since the original construction if built after March 7, 1973.*

3411A.1 Alterations. *For this section, alterations include any additions, alterations, repairs, and / or seismic retrofit to a hospital building or portions thereof. The provision of Section 3403A ~~Additions, Alterations or Repairs. of Chapter 34 of the California Building Code~~ shall apply for Hospital Buildings.*

3411A.2 ***Seismic Retrofit.*** *Any seismic retrofit of hospital building required by Article 2 and Article 11, Chapter 6, Part 1, Title 24, shall meet the requirements of Sections ~~1640A through 1649A~~ 3403A, 3412A through 3414A.*

> ***EXCEPTION:*** *Hospital buildings evaluated to SPC 1 due to deficiencies identified by Article 10, Chapter 6, Part 1, Title 24, may be upgraded to SPC 2 by altering, repairing or seismically retrofitting these conditions in accordance with the requirements of Sections ~~1640A through 1649A~~ 3403A, 3412A through 3414A.*

3411A.3 ***Alterations, additions and repairs to existing buildings or structures not required by Chapter 6, Part 1, Title 24.***

3411A.3.1 ***Approved existing buildings.*** *Structural alterations or repairs may be made to approved building provided the entire building, as modified, including structural alterations or repairs, conform to Sections ~~1640A through 1649A~~ 3403A, 3412A through 3414A requirements for the seismic structural performance category (SPC) of the building as determined by Chapter 6, Part 1, Title 24. Additions shall conform to the requirements of these regulations for new construction.*

3411A.3.2 ***Pre-1973 buildings.***

3411A.3.2.1 ***Incidental structural alterations, additions or repairs.*** *The existing structural elements affected by the alteration, addition or repair shall conform or shall be made to conform to the vertical load requirements of these regulations. Incidental structural additions will be permitted provided the additions meet these regulations for new construction using importance factor, I, equal to or greater than 1.0. Alterations or repairs to the existing lateral load-resisting system must meet the requirements of Sections ~~1640A through 1649A~~ 3403A, 3412A through 3414A.*

3411A.3.2.2 ***Minor structural alteration, additions or repairs.*** *Minor structural alterations, additions or repairs shall be permitted provided they meet the following: Alterations to existing gravity and / or lateral load-resisting system shall be made to conform to the requirements Sections ~~1640A through 1649A~~ 3403A, 3412A through 3414A; or additions shall meet all of the requirements of these regulations for new construction using an importance factor, I, equal to or greater than 1.0.*

3411A.3.2.3 ***Major structural alteration, additions or repairs.*** *Major structural alterations, additions or repairs shall be permitted provided the entire building, as modified, including the structural alterations or repairs, conforms to the requirements of Sections ~~1640A through 1649A~~ 3403A, 3412A through 3414A for no less than SPC 2. Additions shall meet the requirements of these regulations for new construction.*

It shall also be demonstrated by a written report submitted by the structural engineer, acceptable to enforcement agency, that an investigation of the existing building structure shows it to be constructed in a reasonable conformance with the submitted drawings and specifications.

3411A.3.2.3 *An alteration which involves the removal of one or more entire stories will be permitted if the lateral-load-resisting capacity of the remaining structure is not reduced.*

An alteration which involves the removal of other than one or more entire stories will be permitted in accordance with Sections ~~1640A through 1649A~~ 3403A, 3412A through 3414A.

(Relocated from 1640A, 2001CBC) ***SECTION 3412A ~~Division VI-R~~ EARTHQUAKE EVALUATION AND DESIGN FOR RETROFIT OF EXISTING HOSPITAL BUILDINGS***

3412A ***~~1640A~~*** ***GENERAL***

3412A.1 ***~~1640A.1~~*** ***Purpose.*** *All modifications, alterations, and / or repairs to existing structures or portions thereof shall, at a minimum, be designed and constructed to resist the effects of seismic ground motions as provided in this section. When applicable, the structural system shall be evaluated by the design professional of record and, if not meeting or exceeding the minimum seismic design requirements of this section, shall be retrofitted in compliance with these requirements.*

3412A.1.1 ***~~1640A.1.1~~*** ***Minimum seismic design.*** *The purpose of this section is to provide a minimum level of seismic performance. At this essential life safety level (seismic performance category, SPC - 2), in general, persons in and around the building will be able to safely exit or be evacuated from the building or its vicinity following an earthquake. It does not mean that persons will not be injured or not be in need of medical attention. This level of seismic performance is presumed to be achieved when a) the building has some margin against either total or partial*

collapse of the structural system even though significant damage may have occurred that may not be economical to repair; b) major structural elements have not fallen or been dislodged so as to pose a life-safety threat; and c) nonstructural systems or elements that are heavy enough to cause severe injuries either within or outside the building have not been dislodged so as to pose a life-safety threat. For buildings in seismic performance categories SPC- 3 through SPC – 5, the purpose of this section is to provide the immediate occupancy level of seismic performance. At this level, the building and essential non-structural systems will be reasonably capable of functioning following an earthquake.

3412A.2 ~~1640A.2~~ Applicability

3412A.2.1 ~~1640A.2.1~~ *The requirements of this ~~division~~ section apply to hospital building where Chapter 6. Part 1, Title 24 Building Standard Administrative Code, so requires , wherever the structure is to be retrofitted, repaired, or modified and; 1) there is change in occupancy; or 2) changes to structural elements that reduce the lateral load capacity by more than 5% at any story; or 3) repair of structural elements where the damage has reduced the lateral load capacity by more than 10% at any story; or 4) changes in live or dead load that increase the story shear by more than 5%; or 5) where required by Sections ~~1638A~~ 3403A, 3411A or Chapter 6, Part 1, Title 24, Building Standard Administrative Code. Changes in items 2), 3), and 4) are cumulative for past alterations to the building.*

Where items 1 through 5 are not applicable, the alteration, retrofit or repair shall meet the requirements of this section, but upgrade of the whole structure is not required.

3412A.2.2 ~~1640A.2.2~~ Evaluation required. *If the criteria in Section ~~1640.2~~ 3412A.2.1 apply to the project under consideration, the design professional of record shall provide an evaluation in accordance with ~~1640A.2~~ FEMA 356, as modified herein, to determine the seismic performance of the building in its current configuration and condition. If the structure seismic performance is evaluated as satisfactory and ~~the peer reviewer (s), when method B of section 1648A is use~~, enforcement agent concur, then no structural retrofit is required.*

> ***EXCEPTION:*** *In some cases a technical review and evaluation may be waived under the exception of Section ~~1648.1~~ 3413A.1, where the life safety threat posed by building is clearly minimal.*

3412A.2.3 ~~1640A.2.3~~ Retrofit required. *Where the evaluation indicates the building does not meet the SPC performance objective of this section, the owner shall take appropriate steps and either 1) undertake the seismic retrofit as part of the modifications, alterations and / or repairs; or 2) provide a plan, acceptable to the enforcement agent, to complete the seismic retrofit in a timely manner.*

3412A.3 ~~1640A.3~~ *The modification to any existing building may be prepared in accordance with the requirements of a new building in this Code. ~~Chapter 16A, Division VI, Part 2, Title 24, California Code of Regulations, 2001 edition.~~*

3412A.4 ~~1640A.6.1~~ *The structural system allowances of Sections 3403A.2.1 & 3403A.2.2 ~~Chapter 34~~ do not apply to any building to which Sections 3411A through 3414A ~~Division VI R~~ apply.*

SECTION 3413A SEISMIC REHABILITATION OF BUILDINGS

3413*A.1* *(Relocated from 1648A.1, 2001CBC)* ***GENERAL.*** *The existing or retrofitted structure shall be demonstrated to have the capability to sustain the deformation response due to the specified earthquake ground motions. The engineer shall provide an evaluation of the response of the existing structure in its current configuration and condition to the ground motions specified. If the building's seismic performance is evaluated as satisfactory and ~~the peer reviewer(s)~~ the enforcement agent concurs, then no further engineering work is required. When the evaluation indicates the building does not meet the objective of safety goals of this chapter ~~division~~ and the applicable structural seismic performance (SPC) and nonstructural seismic performance (NPC) requirements, then a retrofit and / or repair design shall be prepared that yields a structure that meets the life-safety and operational performance objectives of Section ~~1640A~~ 3412A and reflects the appropriate consideration of existing conditions. Any approach to analysis and design may be used that yields a building of reliable stability in the prescribed design earthquake loads and conditions. The approach shall be rational, shall be consistent with the established principals of mechanics, and shall use the known performance characteristics of materials and assemblages under reversing loads typical of severe earthquake ground motions.*

> ***EXCEPTION:*** *Further consideration of the structure's seismic performance can be waived by the Enforcement Agent if both the engineer-of-record and ~~peer reviewer(s) and / or~~ Enforcement Agent conclude that the structural system can be expected to perform at least as well as required by the provisions of ~~this division~~ Section 3403A, 3412A through 3414A without completing an analysis of the structure's conformance*

to these requirements. A detailed report shall be submitted to the responsible Enforcement Agent that presents the reasons and basis for this conclusion. This report shall be prepared by the engineer of record. ~~The peer reviewer(s) and / or~~ Enforcement Agent shall concur in this conclusion and affirm to it in writing.

3413*A.2 Modifications to FEMA 356.* *This section is applicable to seismic evaluation, analysis and design using the provisions of FEMA 356 per section 3403A.2.3.3. The text of FEMA 356 shall be modified as indicated in sections 3413A.2.1 through 3413A.2.37.*

3413*A.2.1 FEMA 356 Sections 1.3, 1.4, 1.5.* *Replace FEMA 356 Sections 1.3, 1.4 and 1.5 as follows:*

Seismic Rehabilitation Process and Objective. *Seismic evaluation procedure, building performance level and rehabilitation objectives for Hospital Buildings shall be per California Building Standards Administrative Code (Part 1, Title 24 CCR), Chapter 6.*

3413*A.2.2 FEMA 356 Section 1.6 Seismic Hazard.* *Replace FEMA 356 Section 1.6 by the Following:*

The ground motion characterization shall be based on ground shaking having a 10 percent probability of exceedance in 50 years for category SPC-2 at the essential life-safety performance level. For SPC-3 through SPC-5, the ground motion characterization shall be based on ground shaking having a 10 percent probability of exceedance in 50 years at the immediate occupancy performance level and the maximum considered earthquake at the collapse prevention performance level.

Ground shaking having a 10 percent probability of exceedance in 50 years need not exceed 2/3 of the maximum considered earthquake.

Response spectra and acceleration time histories shall be constructed in accordance with sections 1613A, 1614A and 1802A.6.

3413*A.2.3 FEMA 356 Section 2.2.6.* *Modify FEMA 356 Section 2.2.6 by the Following:*

Data Collection Requirements. *The extent of data collection shall be at Usual level for SPC -2 and Comprehensive level for SPC-3 through SPC-5 per FEMA 356 Table 2-1. Materials properties testing program shall be pre-approved by the Enforcement Agent.*

For building, built under an OSHPD permit based on 1976 or later edition of CBC, where materials properties are shown on design drawings and original materials test data are available, no materials testing shall be required when approved by the enforcement agent.

3413*A.2.4 FEMA 356 Section 2.4.1.1.* *Modify FEMA 356 Section 2.4.1.1 by the Following:*

Method to Determine Limitations on Use of Linear Procedures. *The applicability of linear procedures shall be determined as follows:*

1. *If all component DCRs $\leq$ 1.5 for SPC-3 through 5 buildings or 2.0 for SPC-2 buildings, then linear procedures are applicable.*
2. *If up to 10% of the component DCRs exceeds 1.5 and no irregularities described in Sections 2.4.1.1.1 through 2.4.1.1.4 are present, then linear procedures are applicable.*
3. *If one or more component DCRs exceed 1.5 and any irregularity described in Section 2.4.1.1.1 through 2.4.1.1.4 are present, then linear procedures are not applicable and shall not be used.*
4. *Linear procedures are not applicable to moment resisting frames where plastic hinges do not form in either the beam at the face of column or in the column panel zone*.

3413*A.2.5 FEMA 356 Section 2.4.2.1* *Modify FEMA 356 Section 2.4.2.1 by the Following:*

Nonlinear Static Procedure. *If higher mode effects are significant, either the Nonlinear Dynamic Procedure or Modal Pushover Analysis procedure, subject to the approval of the enforcement agent, shall be used.*

3413*A.2.6 FEMA 356 Section 2.4.4.5.* *Modify FEMA 356 Section 2.4.4.5 by the Following:*

Material Properties. *Expected material properties are not permitted to be determined by multiplying lower bound values by the assumed factors specified in Chapters 5 through 8.*

3413*A.2.7 FEMA 356 Section 3.2.10.1.* *Modify FEMA 356 Section 3.2.10.1 by the Following:*

Linear Procedures. *Equation 3-6 is not permitted by OSHPD.*

3413*A.2.8 FEMA 356 Section 3.3.1.3.1.* *Modify FEMA 356 Section 3.3.1.3.1 by the Following:*

Pseudo Lateral Load.

C_2 = Modification factor to represent the effects of pinched hysteresis shape, stiffness deterioration and strength deterioration on maximum displacement response. Values of C_2 for different framing systems and Structural Performance Levels shall be obtained from Table 3-3. For linear procedures, C_2 may be taken as 1.0 if all DCRs are less than 1.5.

3413*A.2.9 FEMA 356 Section 3.3.1.3.5.* *Replace FEMA 356 Section 3.3.1.3.5 as follows:*

Unreinforced Masonry Buildings. *Unreinforced Masonry not permitted by OSHPD.*

3413*A.2.10 FEMA 356 Section 3.3.3.2.4.* *Modify FEMA 356 Section 3.3.3.2.4 by the Following:*

Idealized Force-Displacement Curve. *The effective yield strength, V_y, and yield displacement of the building shall not be used to determine acceptance criteria based on displacement ductility or strength beyond the provisions without approval of the enforcement agent.*

3413*A.2.11 FEMA 356 Section 3.3.3.3.2.* *Modify FEMA 356 Section 3.3.3.3.2 by the Following:*

Target Displacement.

C_2 = Modification factor to represent the effects of pinched hysteresis shape, stiffness deterioration and strength deterioration on maximum displacement response. Values of C_2 for different framing systems and Structural Performance Levels shall be obtained from Table 3-3.

3413*A.2.12 FEMA 356 Table 3-3.* *Modify FEMA 356 Table 3-3 by the Followings:*

Values for Modification Factor C_2.
Footnote 1. Structures in which more than 30% of the story shear at any level is resisted by any combination of the following components, elements, or frames: ordinary moment resisting frames, concentrically-braced frames, frames with partially restrained connections, tension-only braces, unreinforced masonry walls, shear-critical piers and spandrels of reinforced concrete or masonry, flexurally controlled reinforced concrete and masonry walls without boundary elements and welded steel special moment resisting frames with Pre-Northridge connections.

3413*A.2.13 FEMA 356 Section 3.4.2.2.* *Modify FEMA 356 Section 3.4.2.2 by the Following:*

Acceptance Criteria for Linear Procedures – Drift Limitations. *The interstory drift ratio shall not exceed the following values for the specified systems for the performance level under consideration. For dual systems, the least interstory drift ratio shall control.*

> ***EXCEPTION:*** *Larger interstory drift ratios shall be permitted where justified by rational analysis that both structural and non-structural elements can tolerate such drift and approved by the enforcement agent.*

Seismic Force Resisting System	***IO***	*LS*	*CP*
Moment Frames	*0.015*	*0.020*	*0.025*
Braced Frames	*0.010*	*0.015*	*0.020*
Shear Walls	*0.007*	*0.010*	*0.015*

3413*A.2.14 FEMA 356 Section 3.4.3.2.1.* *Modify FEMA 356 Section 3.4.3.2.1 by the following:*

Deformation-Controlled Actions. *For SPC-3 through SPC-5, primary components shall be within the acceptance criteria for primary components and secondary components shall be within the acceptance criteria for secondary components.*

3413*A.2.15 FEMA 356 Section 4.4.* *Modify FEMA 356 Section 4.4 by the followings:*

Foundation Strength and Stiffness. *Foundation and soil strength shall be used to evaluate potential overturning, uplift and sliding for fixed base assumptions, and stiffness for flexible base assumptions, including deformations associated with those actions.*

3413*A.2.16 FEMA 356 Section 4.4.1.1.* *Replace FEMA 356 Section 4.4.1.1 as follows:*

Presumptive Capacities. *Not permitted by OSHPD*

3413*A.2.17 - FEMA 356 Section 4.4.1.2.* *Replace FEMA 356 Section 4.4.1.2 as follows:*

Prescri~~um~~ptive Expected Capacities. *Not permitted by OSHPD.*

3413*A.2.18 - FEMA 356 Section 4.4.3.2.2.* *Modify FEMA 356 Section 4.4.3.2.2 by the following:*

Flexible Base Assumption. *The soil strength shall be evaluated.*

3413*A.2.19 - FEMA 356 Section 4.5.* *Modify FEMA 356 Section 4.5 by the following:*

Seismic Earth Pressure. *Where the grade difference from one side of the building to another exceeds one-half story height, the seismic increment of earth pressure shall be added to the gravity lateral earth pressure to evaluate the building overturning and sliding stability and the lateral force resisting system below grade in combination with the building seismic forces.*

3413*A.2.20 FEMA 356 Table 5-6.* *Modify FEMA 356 Table 5.6 by the following:*

Acceptance Criteria for Nonlinear Procedures - Structural Steel Components.
For fully and partially restrained moment connections, the plastic rotation angles and residual strength ratios used shall be substantiated by the statistical analysis of three or more applicable cyclic test results subject to the approval of the enforcement agent, except when connections satisfy requirements of AISC 358.

3413*A.2.21 FEMA 356 Section 6.8.1.1.* *Modify FEMA 356 Section 6.8.1.1 by the following:*

Monolithic Reinforced Concrete Shear Walls and Wall Segments. *For nonlinear procedures, shear walls or wall segments with axial loads greater than 0.35 P_o shall be included in the model as primary elements with appropriate strength and stiffness degrading properties assigned to those components subject to the approval of the enforcement agent. For linear procedures, the effects of deformation compatibility shall be investigated using moment-curvature section analyses and cyclic testing results of similar components to determine whether strengthening is necessary to maintain the gravity load carrying capacity of that component.*

3413*A.2.22 FEMA 356 Section 6.8.2.3.* *Modify FEMA 356 Section 6.8.2.3 by the following:*

Strength. *The effective tension and compression flange widths for shear walls or wall segments shall be taken as one half of the distance to the next wall web or 25% of the total wall height, whichever is less.*

3413*A.2.23 FEMA 356 Section 7.4.2.* *Replace FEMA 356 Section 7.4.2 as follows:*

Unreinforced Masonry Walls and Piers In-plane. *Not permitted by OSHPD.*

3413*A.2.24 FEMA 356 Section 7.4.3.* *Replace FEMA 356 Section 7.4.3 as follows:*

Unreinforced Masonry Walls Out-of-plane. *Not permitted by OSHPD.*

3413*A.2.25 FEMA 356 7.4.4.2.2. Shear Strength of Walls and Piers.* *Modify FEMA 356 Section 7.4.4.2.2 by the following:*

The spacing of shear reinforcing, S, shall be less than or equal to the wall pier clear height divided by 2 or the story height divided by 2, whichever is smaller.

3413*A.2.26 FEMA 356 Section 8.3.2.5.* *Modify FEMA 356 Section 8.3.2.5 by the following:*

Default Properties. *Component construction in the building shall be verified to meet the material properties, including fastener size and spacing used in the test assemblies establishing the expected strength and stiffness values given in Tables 8-1 and 8-2.*

3413*A.2.27 FEMA 356 Sections 8.5.4.3, 8.5.5.3, 8.5.6.3, 8.5.7.3, 8.5.8.3. 8.5.9.3, 8.5.10.3, 8.5.11.3, 8.5.12.3, 8.5.13.3, 8.5.14.3, 8.5.15.3, 8.5.16.3, 8.5.17.3, 8.6.3.3, 8.6.4.3, 8.6.5.3, 8.6.6.3, 8.6.7.3, 8.6.8.3, 8.6.9.3, 8.6.10.3, 8,7.2, 8.8.1.3.* *Modify FEMA 356 Sections listed by the following:*

Acceptance Criteria. *Component construction in the building shall be verified to meet the material properties, including fastener size and spacing used in the test assemblies establishing the m-factors and displacement ductility values given in Tables 8-3 and 8-4.*

3413*A.2.28 FEMA 356 Section 9.2.4.* *Modify FEMA 356 Section 9.2.4 by the following:*

Linear Procedures. *Verification of the interstory lateral displacements, isolator displacements, the strength adequacy of the seismic force resisting system and isolation system, and anchorage to the foundation shall be accomplished using the Nonlinear Dynamic Procedure.*

3413*A.2.29 FEMA 356 Section 9.2.5.1.* *Modify FEMA 356 Section 9.2.5.1 by the following:*

Nonlinear Static Procedure. *Verification of the interstory lateral displacements, isolator displacements, the strength adequacy of the seismic force resisting system and isolation system, and anchorage to the foundation shall be accomplished using the Nonlinear Dynamic Procedure.*

3413*A.2.30 FEMA 356 Section 9.2.9.* *Modify FEMA 356 Section 9.2.9 by the following:*

Isolation System Testing and Design Properties - Production Tests. *Production testing and associated acceptance criteria shall be as approved by the enforcement agent.*

3413*A.2.31 FEMA 356 Section 9.2.9.2.9.* *Modify FEMA 356 Section 9.2.9.2.9 by the following:*

Testing Similar Units. *The testing exemption shall require approval by the enforcement agent.*

3413*A.2.32 FEMA 356 Section 9.3.4.* *Modify FEMA 356 Section 9.3.4 by the following:*

Linear Procedures. *Verification of the interstory lateral displacements, damper relative velocities and displacements, the strength adequacy of the seismic force resisting system and damping system, and anchorage to the foundation shall be accomplished using the Nonlinear Dynamic Procedure.*

3413*A.2.33 FEMA 356 Section 9.3.5.1.* *Modify FEMA 356 Section 9.3.5.1 by the following:*

Nonlinear Static Procedure. *Verification of the interstory lateral displacements, damper relative velocities and displacements, the strength adequacy of the seismic force resisting system and damping system, and anchorage to the foundation shall be accomplished using the Nonlinear Dynamic Procedure.*

3413*A.2.34 FEMA 356 Section 9.3.8.* *Modify FEMA 356 Section 9.3.8 by the following:*

Required Tests of Energy Dissipation Devices - Production Tests. *Production testing and associated acceptance criteria shall be as approved by the enforcement agent.*

3413*A.2.35 FEMA 356 Chapter 10.* *Replace FEMA 356 Chapter 10 as follows:*

Simplified Rehabilitation. *Not permitted by OSHPD.*

3413*A.2.36 FEMA 356 Section 11.1.* *Modify FEMA 356 Section 11.1 by the following:*

Scope. *The seismic rehabilitations of nonstructural components and system shall satisfy the requirements of Building Standards Administrative Code (Part 1, Title 24 CCR), Chapter 6.*

3413*A.2.37 FEMA 356 Section 11.2.* *Modify FEMA 356 Section 11.2 by the following:*

Procedure. *The seismic rehabilitations objective shall be to satisfy the Nonstructural Performance Requirements of Building Standards Administrative Code (Part 1, Title 24 CCR), Chapter 6.*

(Relocated from 1649A, 2001CBC) ***SECTION 3414A PEER REVIEW REQUIREMENTS***

3414A.1 General. *Independent peer review is an objective technical review by knowledgeable reviewer(s) experienced in structural design, analysis and performance issues involved. The reviewer(s) shall examine the available information on the condition of building, basic engineering concept employed and recommendations for action.*

3414A.2 Timing of Independent Review. *The independent reviewer (s) shall be selected prior to initiation of substantial portion of the design and analysis work that is to be reviewed, and review shall start as soon as practical and sufficient information defining the project is available.*

3414A.3 Qualifications and Terms of Employment. *The reviewer shall be independent from the design and construction team.*

3414A.3.1 *The reviewer(s) shall have no other involvement in the project before, during or after the review, except in a review capacity.*

3414A.3.2 *The reviewer shall be selected and paid by owner and shall have technical expertise in repair of buildings similar to the one being reviewed, as determined by enforcement agent.*

3414A.3.3 *The reviewer (in case of review team, the chair) shall be a California-licensed structural engineer who is familiar with technical issues and regulations governing the work to be reviewed.*

3414A.3.4 *The reviewer shall serve through completion of the project and shall not be terminated except for failure to perform the duties specified herein. Such termination shall be in writing with copies to enforcement agent, owner, and the engineer of record. When a reviewer is terminated or resigns, a qualified replacement shall be appointed within 10 working days.*

3414A.4 Scope of Review. *Review activities shall include, where appropriate, available construction documents, design criteria, observation of the condition of structure, all new and original inspection reports, including methods of sampling, analyses prepared by the engineer of record and consultants, and the retrofit or repair design. Review shall include consideration of the proposed design approach, method, materials and details.*

3414A.5 Reports. *The reviewer(s) shall prepare a written report to the owner and responsible enforcement agent that covers all aspect of the review performed including conclusions reached by the reviewer. Report shall be issued after the schematic phase, during design development, and at the completion of construction documents, but prior to their issuance of permit. Such report shall include, at the minimum, statement of the following.*

1. *Scope of engineering design peer review with limitations defined.*
2. *The status of the project documents at each review stage.*
3. *Ability of selected materials and framing systems to meet the performance criteria with given loads and configuration.*
4. *Degree of structural system redundancy and the deformation compatibility among structural and non-structural elements.*
5. *Basic constructability of the retrofit or repair system.*
6. *Other recommendation that will be appropriate for the specific project.*
7. *Presentation of the conclusions of the reviewer identifying any areas that need further review, investigation and / or clarification.*
8. *Recommendations.*

3414A.6 Responses and Corrective Actions. *The engineer of record shall review the report from the reviewer(s) and shall develop corrective actions and other responses as appropriate. Changes observed during construction that affect the seismic-resisting system shall be reported to the reviewer in writing for review and recommendations. All reports, responses and corrective actions prepared pursuant to this section shall be submitted to the responsible enforcement agent and the owner along with other plans, specifications and calculations required. If the reviewer resigns or is terminated by the owner prior to completion of the project, then the reviewer shall submit copies of all reports, notes, and the correspondence to the responsible enforcement agent, the owner, and the engineer of record within 10 working days of such termination.*

Notation [For OSHPD]:
Authority: Health and Safety Code Section 129850
Reference: Health and Safety Code Sections 1275 129850 and 129790